AF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

MATTHEW R. HYRE ET AL : Art Unit: 1731

Serial No: 10/005,567 : Examiner: Carlos N. Lopez

Filed: December 5, 2001 : Docket No: 5352-05

For: GLASS CONTAINER FORMING MACHINE

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Sir:

BRIEF ON APPEAL

Three copies of this brief are submitted. The fee ($500.00) for the Brief on Appeal and any additional fees that may be due should be charged to Deposit Account No. 50-0696.

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(1) Real Party In Interest

This application has been assigned to Emhart Glass SA which is a wholly owned subsidiary of Bucher Industries SA.

(2) Related Appeals and Interferences

A Brief on Appeal was filed on November 21, 2005, in a related application Serial No. 10/005,682, filed December 5, 2001.

(3) Status of the Claims

This appeal is from a final rejection dated September 8, 2005 and concerns rejected independent claim 1 and rejected dependent claims 2 and 3. Claims 4-6 stand allowable. This appeal will deal only with claim 1 and dependent claim 3. Claim 2 will either stand or fall with claim 1.

(4) Status of Amendments

An amendment was filed on October 26, 2005, in response to the final rejection. Among the issues raised in the final rejection were the following:

1. The Examiner argued that the phrase "profiled actuator" in a claim was not found in the specification. Applicant proposed that the specification be amended to equate the specified servo motor to a profiled actuator, based on patent literature that stated that servo motors were profiled actuators. The examiner rejected this proposal.

2. The Examiner rejected claim 3 arguing that "the cooling requirements" lacked antecedent basis. Applicant proposed that "the" be deleted from this phrase and the Examiner rejected this proposal.

(5) Summary of Claimed Subject Matter

The present invention relates to the formation of glass bottles in an I.S. machine. A glass parison is formed from a gob of molten glass in a blank mold and is then transferred into a blow mold. A blow head 18 (Fig. 1), which has a blow tube 36/Fig.2, is displaced from a remote position to a position where it rests on top the blow mold 12/Fig.2 (which locates the blow tube in its correct bottle blowing location) and the blow head is then connected to a pressurized air supply 26/Fig.2 to blow the parison into the shape of the blow mold (the shape of the bottle being formed). This pressure almost immediately blows the parison into a bottle. Pressure continues to be applied and air flow into and from the mold continues through a controlled exhaust in the blow head.

Before blow molds can be opened and the bottle removed and displaced to the next location in the process, the surface of the bottle must be cooled or chilled sufficiently so that the chilled bottle will be rigid for such displacement. Heat is transferred from the outer surface of the bottle via contact with the molds and the rate of cooling can be increased by cooling the molds. The internal surface of the formed bottle is cooled by the air flowing from the blow head into the mold and out from the blow head exhaust 42/Fig.2. When the bottle is ready for transfer, the blow head (and blow tube) retract to a remote position, the molds open and a takeout 140/Fig.13 is lowered to grip the bottles and transfer them to a dead plate 240/Fig.16.

In accordance with the invention disclosed in this application, applicants have defined a cooling operation within the bottle formed at the blow station of an I.S. machine. This operation requires displacement of the cooling tube a number of times while cooling takes place within the formed bottle.

Presented below is the sole claim herein being reviewed with index numbers and references to the specification added:

1. A blow head mechanism for blowing a parison in a blow mold of a blow station of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the blow station comprising

(A blow head mechanism 10/page 4, line 36 blows a parison into the bottle mold form defined in a blow mold)

a blow head assembly,

(18/page 5, line 2)

support means for supporting said blow head assembly,

(an arm 16/page 5, line 1, supports the blow head assembly. This arm is routinely called a support and thus "support means" specifically defines this structure. The same generic structure was disclosed more than 80 years ago and in fact the cited Rodriquez-Wong patent uses the phrase "support structure" which is the same thing as support means)

first displacement means for displacing said support means to displace said blow head assembly between a remote "off" position and an advanced "on" position,

(22/a motor - page 5, line 3 - which is coupled to rotate a rotatable vertical post/22, page 5, line 2. This displacement means is generically describing a linear actuator such as a pneumatic motor coupled to the post (which has been around for about eighty years or a profiled actuator such as a servomotor coupled to the post which has been in the patent literature for thirty years and such structure would be recognized as the "displacement means" by any engineer in this field.) The above structures are claimed in the broadest possible way

said blow head assembly including a blow tube selectively displaceable between an up position and a down position,

(36/page 5, line 17 - as disclosed the up position is the position at which the parison is blown into a bottle and the down position is a position below the up position which is selected for cooling purposes.)

second displacement means for displacing said blow tube from the up position down to the down position and then back up to the up position a plurality of times during the time that the blow head assembly is at the "on" position,

said second displacement mechanism means including a profiled actuator.

(92/drive member, page 7, line 31,106/motor coupling 106, page 8, line 6, 104/motor, page 8, line 5, algorithm 120/122/124.

Claim 1 very clearly provides that the blow head is at the "on" position while the blow tube is displaced between the up and down locations a number of times. The specification also clearly defines the "on" position as "an advanced "on" position, as shown in figure 1, at which the blow heads engage the top of the molds (Page 5, lines 8-10)".

(6) Grounds Of Rejection To Be Reviewed On Appeal

A. Whether the drawings comply with 37 CFR 1.84(p)(4);

B. Whether the specification, under 37 CFR 1.75(d)(1) and MPEP Section 608.01(o) provides proper antecedent basis for the subject matter claimed in claim 1;

C. Whether claim 3 is indefinite under 35 U.S.C. 112, for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

D. Whether claim 1 is patentable under 35 U.S.C. 103 over Rodriquez-Wong in view of Virog.

(7) Argument

A. Whether the drawings comply with 37 CFR 1.84(p)(4);

The Examiner has objected to the drawings ''because reference characters ''90", ''92" and ''102" have both been used to designate bearings and drive member. Applicant has reviewed the specification and has found the following:

A. Drive member 92: page 7, lines 31 and 35, page 8, line 8, page 11, line 4;

B. Bearings 102, page 7, line 36;

C. Top portion 90, page 7, line 31.

These numbers only index a single item and the item is clearly indexed in the corrected drawings submitted on January 20, 2004.

Applicant believes that the Examiner's objection to the drawings is in error and that this objection should be overruled.

B. Whether the specification, under 37 CFR 1.75(d)(1) and MPEP Section 608.01(o) provides proper antecedent basis for the subject matter claimed in claim 1;

Claim 1 includes the following:

''...said second displacement means including a profiled actuator.''
Claim 2 defines this profiled actuator as a servo motor. The Examiner objected to the fact that the phrase ''profiled actuator'' was not in the specification. In an amendment after final applicants proposed amending the specification as follows:

Page 5, lines 1-14, change as follows:

''The blow head arm 16 is mounted on a vertical post 20 coupled to an electronic (servo) motor 22 which causes the blow head arm to move up and down. A servo motor is a profiled actuator since the associated displacement is carried out per a defined profile - see U.S. Patent No. 5,445,662, for example.''

This patent is a patent dealing with an I.S. machine and specifically defines a servo motor as a profiled actuator - as does claim 2. A ''profile'' is a well recognized term which defines the program of motion of a motor.

The Examiner rejected this proposal. It is hard to argue that applicants cannot put ''profiled actuator'' into the specification. The Examiner's objection should be overruled.

C. Whether claim 3 is indefinite under 35 U.S.C. 112, for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

Claim 3 provides:

3. A blow head mechanism according to claim 1, wherein the profile of the profiled actuator displaces the cooling tube in coordination with the cooling requirements of the blown parison/formed bottle.

The Examiner argues that the cooling requirements does not have proper antecedent in the claim, i.e., earlier in the claim the fact that a bottle has cooling requires should be expressed - or the word " the" should not be used. Applicants proposed that -- the cooling requirements -- be changed to ''cooling requirements'' - but this proposal was rejected. Applicants believe that since ''the cooling requirements'' refers to characteristics of a bottle to be cooled and not to the claimed structure, a lack of antecedent basis is not correct. Applicant was, however, willing to make this change which should have satisfied the Examiner. The Examiner's rejection under 35 U.S.C. 112 should be reversed or applicants should be able to overcome the rejection by removing ''the''.

D. Whether claim 1 is patentable under 35 U.S.C. 103 over Rodriquez-Wong in view of Virog.

I. Rodriquez-Wong

Rodriquez-Wong discloses a traditional blow head that has a blow tube which is open at the bottom. As the blow head is lowered into operating position, the blow tube, which can be located either at an up position or a down position, is simultaneously lowered to its down position. With the blow head and blow tube both in the down position, the parison will be blown:

''...The blow nozzle, 30 and the blowing head 50, (position B) move downwards. The blowing nozzle, 30, is introduced by the neck of the article E, for blowing or final shaping of the stated article E, while the blowing head, 50, makes contact with the upper part of mold M, to form a pressure chamber during the final blowing of the article.''

This is how a blow head works. A closed chamber is defined and with the blow tube located at the parison blow position, pressure is turned on.

In Rodriquez-Wong, when this process is completed (with the blow tube still at the bottom, ''the blowing head has an upward movement . . . while the nozzle 30 keeps supplying air to the recently formed bottle''. Rodriquez-Wong is pointing out that unlike conventional blow heads, this combined takeout/blowhead does not turn the air off when the blowhead is to be retracted since the blow tube can remain in position until the take out tongs of the combined blowhead/takeout close around the formed bottle. Following blow head retraction, the molds are opened, the grippers of the takeout are closed below the finish of the formed bottle, and the blow tube is then retracted to its up position:

''the blow mold . . . opens and the tongs . . . close around the neck of the container . . . while the nozzle . . . carries out an upward movement disengaging itself from the neck of the container.''

While Rodriquez-Wong does not say when air is turned off, such final blow air is conventionally turned off before the blow tube is elevated since air costs money and since noise is an issue within the glass plant. Air normally remains off until the blow head again is located on top of the blow molds.

Rodriquez-Wong accordingly discloses a conventional blowhead-blowtube wherein the blow tube has a single operating position - the blow tube down position. Air will be turned on and off at this position. The blow tube does not oscillate during the time when the parison is blown and cooled.

II. Virog

Virog discloses a plastic injection machine for blowing plastic bottles. Applicants fail to see how anything in this patent is relevant to the issues herein.

III. CLAIM 1 IS PATENTABLE

The Examiner rejects claim 1 by defining ''on'' to mean the duration of time when the I.S. machine is ''on''. To give some frame of reference to this, an I.S. machine can operate at four second cycles, 24/7 for months at end. If it operated 24/7 for a month, there would be over 500K times when the blowhead would be ''on''. The Examiner is equating this activity of a prior art I.S. machine of the type discussed above. No one in the I.S. machine industry would define ''on'' in this manner. Applicant defines ''on'' as the time when the blowhead is on top of the blow heads and this is how anyone in this industry would understand this term.

No reference teaches ''displacing said blow tube from the

up position to the down position and then back up to the up position a plurality of times during the time that the blow head assembly is at the ''on'' position. . . .''

Accordingly, the examiner's rejection of claim 1 under 35 U.S.C. 103, should be reversed.

Respectfully submitted,

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CLAIMS APPENDIX

1. A blow head mechanism for blowing a parison in a blow mold of an I.S. machine and cooling the blown parison so that a bottle will be formed which can be removed from the blow mold comprising

a blow head assembly,

support means for supporting said blow head assembly,

first displacement means for displacing said support means to displace said blow head assembly between a remote ''off'' position and an advanced ''on'' position,

said blow head assembly including a blow tube selectively displaceable between an up position and a down position,

second displacement means for displacing said blow tube from the up position to the down position and then back up to the up position a plurality of times during the time that the blow head assembly is at the ''on'' position,

said second displacement means including a profiled actuator.

2. A blow head mechanism according to claim 1, wherein said profiled actuator is a servomotor,

3. A blow head mechanism according to claim 1, wherein the profile of the profiled actuator displaces the cooling tube in coordination with the cooling requirements of the blown parison/formed bottle.

4. A blow head mechanism according to claim 1, wherein the blown parison has an upper neck portion and a lower body portion, said profiled actuator including a displacement profile which will displace the blow tube from the up position to the location where the upper neck portion meets the lower body portion at an average velocity higher than the average velocity at which the blow tube will be displaced from the

location where the upper neck portion meets the lower body portion to the bottom of the blown parison.

5. A blow head mechanism according to claim 4, wherein said displacement profile will cause said blow tube to dwell at the bottom of the blown parison for a selected period of time.

6. A blow head mechanism according to claim 5 wherein the displacement profile will displace the blow tube from the down position to the location where the upper neck portion meets the lower body portion at said average lower velocity and will displace the blow head tube from the location where the upper neck portion meets the lower body portion to the up position at said higher average velocity.